NATIONAL SYNCHROTRON LIGHT SOURCE
SAD RISK ASSESSMENT

APPENDIX 4

SYSTEM: Building 725 activities

SUBSYSTEM: Fire prevention

HAZARD: Fire

HAZARD IMPACT:

Possible personnel injury, equipment damage or loss, or programmatic impact

RISK ASSESSMENT PRIOR TO MITIGATION:

Consequence	☐ **I** High	☒ **II** Moderate	☐ **III** Low	☐ **IV** Routine
Probability	☐ **A** Frequent		☐ **D** Remote	
	☐ **B** Probable		☐ **E** Extremely Remote	
	☒ **C** Occasional		☐ **F** Impossible	
Risk Category	☐ **I** High	☒ **II** Moderate	☐ **III** Low	☐ **IV** Routine

MITIGATING FACTORS

- **A Fire Protection Assessment/Fire Hazard Analysis has been developed to comprehensively and qualitatively assess the risk from fire within the NSLS to ensure DOE fire protection criteria are met as outlined in DOE Order 420.1 , Ch. 4. The Fire Protection Assessment includes identifying the risks from fire and related hazards (direct flame impingement, hot gases, smoke migration, fire-fighting water damage, etc.). A Fire Hazard Analysis is incorporated into this Assessment.
- Non-combustible construction used throughout the facility
- Extensive early warning fire detection, e.g. smoke detectors, rate-of-rise heat detectors
- Automatic fire suppression, e.g. sprinkler systems
- Manual fire suppression provided by ample portable fire extinguishers
- Alarm systems to alert occupants and summon fire department, e.g. fire alarm bells/strobes, manual pull stations, Control Room evacuation alarm station, connection to on-site fire dept.
- Full time, BNL Fire/Rescue Group with mutual aid arrangements with local fire departments
- Extensive preplanning (including run cards) and drills with NSLS staff
- Emergency generator providing power to lights in the event of a power outage
- Tier I inspections to minimize combustibles and ignition sources
- Igniton source control programs (Cutting/Welding permits, no smoking policy)
- Cabinets to store flammable and hazardous chemicals
- Experiment Safety Review to minimize fire hazards of experiments by design features
- Fire evacuation drills

RISK ASSESSMENT FOLLOWING MITIGATION:

Consequence	☐ **I** High	☒ **II** Moderate	☐ **III** Low	☐ **IV** Routine
Probability	☐ **A** Frequent		☒ **D** Remote	
	☐ **B** Probable		☐ **E** Extremely Remote	
	☐ **C** Occasional		☐ **F** Impossible	
Risk Category	☐ **I** High	☐ **II** Moderate	☒ **III** Low	☐ **IV** Routine